RIDOLFI

# M E M O R A N D U M

**DATE:** **June 30, 2011**

**TO:** **Rose Longoria**

**FROM:** **Colin Wagoner**

**SUBJECT:** **LGW presentation on Portland Harbor FS (June 21 and 22, 2011)**

## Background

LWG presented information supporting the development of the draft feasibility study (FS) report at a two-day meeting at the Portland Sheraton on June 21 and 22, 2011. The meeting was attended by approximately 50 to 60 representatives of EPA, DEQ, the tribes, LWG, and various representatives for LWG. The materials were presented in a series of 10 presentations that were intended to provide the government team with a level of comfort that the draft FS would be largely satisfactory when received in November 2011. LWG presented several important concepts in the meeting at a level of detail that had not previously been shared. Table 4 from their presentation has several of the key concepts (attached). These include:

- Remedial Action Levels (RALs). LWG proposes to use a range of numerical RALs for PCBs, Benzo(a) pyrene (BaPEq), and DDE; as well as one for benthic toxicity as represented by a factor called "mean quotient" (MQ).

- LWG proposes to use eleven alternatives (see Table 4), all of which, except no action, include an "in situ"-focused and a "removal"-focused approach for the same RALs. For example, alternatives B-i, and B-r, are in-situ and removal variants for RALs of 1,000 ppb (PCBs), 20 ppb BaPEq, and 1,000 ppb DDE. Alternative F uses "Hill topping" to achieve EPA's PRGs at "year 0," which is defined as the end of active remediation.

- LWG showed the sediment management areas (SMAs) for each of the alternatives in a series of maps. The SMAs are relatively small sections of the AOPCs, and the size increases as the RALs decrease.

## Comments on the Materials

There have been two forums for discussions on the LWG materials: there was a government team breakout session on June 22nd after the presentation and a conference call on June 28th. A number of issues were raised by various parties and it seemed that there was general

agreement that these and perhaps other comments would be provided to LWG. It is not clear which of these will be presented as suggestions and which will be presented as directives.

- Monitored Natural Recovery (MNR): The MNR analysis is central to all of the alternatives. The analysis shows that contaminated sediment will be buried by clean(er) sediment such that PRGs will be achieved everywhere in Portland Harbor eventually. It is not clear that this phenomenon is happening everywhere or as quickly as indicated by the model. It also seems unlikely that the certainty in the predictions will increase before the Record of Decision is issued. There are several related questions/issues:
    - A long-term monitoring plan should be developed that will allow evaluation of MNR over time to check the validity of the model. This should include baseline monitoring that would ideally occur in the next year or so.
    - The model results should be qualified based on factors like localized scour or prop-wash at least on a good/neutral/bad basis, so that EPA can select an alternative with location-specific technologies that are more likely to succeed.
    - Are the various lines of evidence being fairly incorporated into the MNR evaluation? In particular, is the empirical pattern of contamination (varying degrees of cleaning upward) consistent with the model?
    - How is the background value for PCBs of 19 ppb being incorporated into the model? It seems that the predicted long-term concentrations are below this value, which needs explanation.
    - The MNR modeling should evaluate conditions from a time zero of when remedies are first implemented (or when the ROD is signed) to evaluate the progress for the site as work proceeds.
    - The MNR modeling should be extended to the food web so that there is a basis for evaluating fish tissue concentrations over time.
    - There should be a sensitivity analysis of the sedimentation rate in the MNR predictions. If the sedimentation rate is less than currently predicted, it will take proportionally longer to achieve PRGs.
- Selection of Indicator Chemicals. As mentioned, LWG proposes using PCBs, BaP, DDE, and MQ as the only drivers for remediation. There are areas of the site where dioxins are a problem and there may be chemical in other areas that should drive cleanup.

- Buried Contaminants: LWG focused on surface contaminants to identify SMAs. There may be areas subject to erosion, where currently buried contaminants could pose a future risk. These scenarios should be identified and evaluated.

- The range of alternatives does not include an end member that is protective enough. EPA is likely to direct LWG to modify Alternative F to have a constant value for PCBs of 100 ppb (currently there is a range of 38 to 388 ppb) and to add an Alternative G that has a PCB value of 50 ppb. It is appropriate to evaluate lower values for the other indicator chemicals too.

- The volumetric factors for dredging (over-dredge, residual dredging, etc.) are high and the Corps recommends using a simple factor ranging from 150 to 200 percent of the neat dredge volume. This will lead to lower volume estimates and lower costs, which will make dredging look more attractive relative to other alternatives in a comparative analysis.

- The SMAs should include hotspots outside of AOPCs as defined by Oregon's regulations, which are an ARAR. There are several definitions that would apply depending on whether human health or ecological risks are being considered.

- The mitigation cost estimates seem high ($1-$2 million per acre). The Trustees are identifying opportunities within the PH area that are on the order of $500K/acre. They may not be able to share the specific examples because they are in negotiations.

- The cost contingency is a fixed 40%, which is on the high side. It is appropriate to include a range of 20% to 40%.

- The implementation rules that specify which type of technology (dredging, in situ treatment, capping) will be applied where are loose, and the result is that the alternatives are seemingly ill-defined. Each alternative in the FS should explicitly state which alternative is being applied where so that the alternatives can be properly evaluated and so that EPA can select an alternative for the ROD that has been evaluated.

- The FS should include an explicit discussion of contingencies so that there is a plan if risk-reduction metrics are not met.

**Requested GIS Layers**

Because it will be almost fifth months until the draft FS is released, it would be helpful to have some of the GIS data that were used to develop the alternatives. These would include the Theissen polygons and subpolygons, and the areas included in each of the alternatives that have been developed to date. This will allow some preliminary data exploration that will facilitate a timely review of the FS when it is issued.